BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
	)	
ETC Annual Reports and Certifications	)	WC Docket No. 14-58
	)	
	)	
Rural Broadband Experiments	)	WC Docket No. 14-259
	)	
	)	

COMMENTS

AMERICAN CABLE ASSOCIATION

The American Cable Association[1] ("ACA") hereby submits comments in response to the Further Notice of Proposed Rulemaking in the above-referenced dockets.[2]

I. INTRODUCTION

Five years ago, the Federal Communications Commission ("Commission") set out on a path to award high-cost support to bring broadband service to unserved areas and to create an

[1] ACA represents approximately 750 smaller cable operators and other local providers of broadband Internet access, voice, and video programming services to residential and commercial customers. These providers pass approximately 19 million households and serve about 7 million. Many of these providers offer service in rural communities and more remote areas.

[2] *Connect America Fund*, WC Docket No. 10-90, *ETC Annual Reports and Certifications*, WC Docket No. 14-58, *Rural Broadband Experiments*, WC Docket No. 14-259, Report and Order and Further Notice of Proposed Rulemaking, FCC 16-64 (rel. May 26, 2016) (referred to herein as the "Report and Order" for rules adopted on May 25, 2016 or the "FNPRM" for the proceeding where comment is being sought on additional matters).

efficient process to achieve that end.[3] With its recent adoption of the Report and Order setting forth rules for the competitive bidding process for Phase II of the Connect America Fund ("CAF"), the Commission is finally nearing that goal. ACA supported rules the Commission adopted in the Report and Order that facilitate participation by all providers, including non-incumbent and smaller providers, which will help the Commission achieve its goal of awarding limited universal service support efficiently.

In adopting its rules, the Commission chose not to structure the competitive bidding process so that the lowest cost, lowest performance networks would be more likely to prevail. ACA supports that approach. Most of ACA's members serve rural and less dense areas, and they understand the great value high-performance broadband service brings to residents and to their communities. The capabilities provided by this service give these residents and communities the tools to allow them to thrive socially and economically. Moreover, ACA members and other terrestrial wireline service providers will be bidding to serve areas where they do not have infrastructure, and it is economically rational for them to participate as bidders to provide high performance networks. In the FNPRM, the Commission seeks to provide to eligible areas with "the highest quality service while making efficient use of universal service funds,"[4] and it has structured a competitive bidding process where applicants will bid simultaneously to deploy broadband service with different performance characteristics. To compare these bids, the Commission is seeking comment on establishing a methodology to weight each tier of performance and level of latency. Putting in place the correct "weighting formula" for the competitive bidding process therefore is critical. ACA appreciates the difficulty

[3] *Connect America Fund et al.*, WC Docket Nos. 10-90 *et al*., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663 (2011) *aff'd sub nom., In re: FCC 11-161*, 753 F.3d 1015 (10th Cir. 2014).

[4] FNPRM, ¶ 212.

of that task, and in these comments it provides the following factors, based on sound legal and economic foundations, that should be taken into account for any weighting methodology.

1. Consumer Preference for Speed and Data Usage: For each performance tier, the weight should reflect consumer preferences for speed and data usage in urban areas[5] over the ten-year timeframe of the program;

2. Consumer Preference for Latency: The weight should reflect consumer preferences in urban areas for the two tiers of latency;

3. Deployment Costs: The weighting methodology should normalize costs among assumed technologies for each performance tier to encourage maximum participation, thereby ensuring support is provided efficiently and consumer preferences are reflected in bidding results.[6]

II. STATUTORY AND POLICY UNDERPINNINGS FOR A WEIGHTING FORMULA

In the Report and Order, the Commission set forth a competitive bidding process where applicants would bid to provide broadband service to eligible areas by selecting one of four

[5] *See* 47 U.S.C. § 254(b)(3), which establishes the principle that consumers in "rural, insular, and high cost areas" should have access to telecommunications services that are reasonably comparable to those services provided in urban areas.

[6] The Commission effectively used a cost normalization approach in the Rural Broadband Experiments program by establishing three different performance tiers and allocating different amounts of support to each tier. (*See Connect America Fund*, WC Docket No. 10-90, *ETC Annual Reports and Certification*, WC Docket No. 14-58, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 8769 (2014). ACA understands the Commission seeks to have a technology-neutral competitive bidding process. It proposes using "assumed technologies" only as a basis for normalizing deployment costs and is open to other methodologies to achieve this objective.

The Commission may consider developing a per-location cost cap for bids that, although a low percentage of the reserve price, may result in the award of unreasonably excessive support.

technology performance tiers[7] with either low or high latency.[8] The Commission would then weight the bids by performance category and latency "to alter the initial cost-effectiveness score of each bid."[9] In the FNPRM, the Commission requests comment on how to weight bids to provide households in eligible areas with "access to high quality broadband services, while making the most efficient use of finite universal service funds."[10] More specifically, the Commission proposes to establish weights that represent for consumers the relative benefits of each performance tier and type of latency.[11]

For any weighting formula to work – that is, achieve the Commission objective of providing consumers in eligible areas with the highest quality broadband service and making efficient use of support – it needs to have a sound legal and economic foundation. ACA submits the following two factors provide this foundation and should underlie the formula to weight the bids:

- Consumer Preference – The Commission has a statutory goal to use support to ensure broadband service in unserved areas is reasonably comparable to service provided in urban areas.[12] Achieving this objective also would serve the public interest and help

[7] The four tiers are: Minimum Performance (at least 10/1 Mbps broadband speed and 150 GB of monthly usage); Baseline Performance (at least 25/3 Mbps broadband speed and 150 GB of monthly usage, or usage that reflects a majority of fixed broadband users, whichever is higher); Above-Baseline Performance (at least 100/20 Mbps broadband speed and an unlimited monthly usage allowance); and, Gigabit Performance (at least 1000/500 Mbps broadband speed and an unlimited monthly usage allowance).

[8] Low latency is defined as meeting 95 percent or more of all peak period measurements of network round trip latency at or below 100 milliseconds. High latency is defined as meeting 95 percent or more of all peak period measurements of network round trip latency at or below 750 milliseconds, and, with respect to voice performance, demonstrate a score of four or higher using the Mean Opinion Score.

[9] FNPRM, ¶ 210.

[10] *Id*. ¶ 207.

[11] *Id*. ¶¶ 210-211.

[12] 47 U.S.C. 254(b)(3). *See* FNPRM, ¶ 14.

bridge the urban-rural digital divide. Determining consumer preference (use) for each performance tier over the 10-year term of the program can be a relatively straightforward process, as can be determining preference for the two latency levels. Each type of preference can be based upon actual consumer subscription to broadband service in urban areas and then a trendline can be used to determine expected use over the term of the program.

- Efficient Distribution – As the Commission recognized in the FNPRM, auctions tend to produce efficient results when the auction design is relatively straightforward and when there is "sufficient granularity with respect to the performance characteristics."[13] However, because the Commission has designed an auction with four performance tiers, it will not maximize participation – and drive efficient outcomes – unless it normalizes the deployment cost across these tiers. In other words, participants seeking to deploy broadband at the lower performance tiers will require little investment – and will tend to bid for less support – while those seeking to deploy at the higher tiers will need to invest substantial amounts *de novo* – and will tend to bid for more support. This means that, unless deployment costs among tiers (based on assumed technologies or other appropriate methodology) are normalized, bidders seeking to provide higher performance services will not participate in the process, and participation will not be maximized, support will not be distributed in the most efficient manner, and consumer preferences will not be reflected. Accordingly, the Commission should normalize deployment costs to achieve these aims.[14]

[13] FNPRM, ¶ 17.

[14] In addition to the two fundamental "weighting" factors, because the cost to deploy facilities and provide service varies greatly among the eligible areas, deployments in certain areas may require very large

In the next section, ACA discusses the methodology by which these concepts should be translated into a weighting formula.

III. TRANSLATING THE STATUTORY AND POLICY UNDERPINNINGS INTO A WEIGHTING METHODOLOGY

As discussed above, the Commission should meet its statutory requirements and policy objectives by creating a weighting formula that reflects both the "consumer preference" and "cost normalization" factors, and it proposes the following methodology:

1. Weight performance tiers (speed and data usage) based on consumer subscription to broadband service in urban areas forecast over the ten-year timeframe of the program.

2. Weight latency based on consumer subscription to broadband service in urban areas forecast over the ten-year timeframe of the program.

3. Normalize costs of deployment based on assumed technology to enable the comparison of bids among performance tiers.

ACA believes there are reasonable approaches to combine the individual weighting factors to produce a single weight. The Commission aims to have the eventual weight "take into account the relative benefits to consumers of the various service tiers."[15] The Commission also provides an example of how an "addition/subtraction" weight could "alter the initial cost-effectiveness score of each bid."[16] ACA submits the Commission also should consider use of a "weight" that could be multiplied or divided against the bid, which would better equalize bids with different performance characteristics. Such an approach could work as follows: for each bid, combine

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amounts of support. To guard against the provision of excessively unreasonable support, the Commission may consider adopting a cap on the amount of support.

ACA also believes the Commission should aim to terminate the provision of support to an eligible area as soon as possible. Accordingly, the Commission should favor applicants deploying "future-proof" facilities, which will require no additional support beyond the 10-year term of the program. ACA's proposed cost-normalization process will help achieve this objective.

[15] FNPRM, ¶ 210.

[16] *Id.*, n. 406.

the weights of the performance and latency factors and the cost normalization factor by dividing the cost-per-location of the bids by the associated weight from each factor.[17]

1. Weight performance tiers based on forecast consumer subscription to broadband service in urban areas

There are a variety of methods the Commission could use to weight performance tiers based on consumer preference for different types (performance) of broadband service in urban areas over the 10-year term. ACA believes the most straightforward and transparent approach is to examine actual subscription rates in urban areas across the US, develop an average subscription rate for each performance tier, and then use a trendline to develop a forecast of that subscription rate over the term. Subscription information is readily accessible from public sources, and the Commission has access through the Form 477 data. Each tier could then be weighted by its percentage of overall subscribership. For instance, if projected subscriptions over the 10-year term in urban areas for Minimum, Baseline, Above-Baseline, and Gigabit performance tiers are 10 percent, 20 percent, 30 percent, and 40 percent of overall subscriptions, respectively, a weight of 1, 2, 3, and 4, respectively, would be applied to each bid corresponding to that performance tier.

2. Determine weighting factors for the two levels of latency

An additional weight should be applied to bids that commit to providing low latency, which should be determined, as above, by reference to consumer subscription to broadband services that provide low latency or high latency capabilities, and then projected for future demand. ACA submits there are various public sources that can be used to determine consumers' latency preferences. As with the performance tiers, for instance, if projected

[17] As discussed above, the Commission may wish to develop a per-location cost cap for bids to ensure unreasonably excessive support is not awarded.

subscriptions over the 10-year term in urban areas for lower latency and higher latency service are 90 percent and 10 percent of overall subscriptions, respectively, a weight of 9 and 1, respectively, would be applied to each bid corresponding to that level.

3. Normalize deployment costs for the performance tier based on assumed technology

The weighting should account for the significant differences in costs for deploying different network technologies in different geographies among the performance tiers. This will require the Commission to examine eligible areas to compare and then normalize deployment costs against the presumptive below-baseline (and typically cheapest) technology of satellite. ACA submits that the Commission can determine deployment costs by using a combination of Commission and public sources. The Commission can leverage the CAF Phase II cost model (or earlier versions) to determine the expected cost to build out greenfield fiber-to-the home, brownfield fiber-to-the-home, greenfield DSL and brownfield DSL. In addition, the Commission should examine actual builds of price cap incumbent carriers that accepted Phase II support to determine whether the costs of these builds reflect the cost model.[18] For fixed wireless deployments, the Commission can leverage authorized Rural Broadband Experiment projects using fixed wireless or LTE wireless to benchmark deployment costs.[19] Finally, for satellite deployments, the assumed capital cost is minimal since the satellites are already in operation.[20]

[18] Measuring the actual cost can be accomplished by querying price cap incumbent carriers and by examining public reports.

[19] Based on a random sampling of 510 Rural Broadband Experiment Expressions of Interest, fixed wireless per location deployment costs range from $500-2,000.

[20] Because the incremental cost of adding a coverage location for a satellite provider is effectively zero, ACA has chosen a low non-zero cost-per-location of $10 so as to ensure a rational bidding process. It is not appropriate to use a fully allocated cost (i.e., total satellite capital cost divided by all locations supported) because satellite providers have launched satellites with no assumption of government support. As their financials demonstrate, they believe there is a profitable business case for satellite

To demonstrate how this normalization process could work, ACA analyzed the different deployment costs for different technologies using the median housing density for high-cost census blocks. ACA determined that fixed wireless costs of deployment are roughly 100 times greater than satellite costs, brownfield DSL costs are roughly 160 times greater than satellite costs, and fiber-to-the-home is roughly 450 times greater than satellite.[21] Thus, the associated weight for fixed wireless would be 100, brownfield DSL could be 160, and the associated weight for fiber-to-the-home could be 450.

IV. CONCLUSION

The Commission, in seeking to use a weighting formula for the Phase II competitive bidding process, has the opportunity to establish beneficial precedent for the future distribution of CAF support. But, no one should underestimate the challenge. To maximize participation, which will drive the efficient allocation of support to provide the highest performance broadband service, the Commission needs to properly identify and assess critical factors. In these comments, ACA has undertaken that task and has proposed a weighting methodology based on statutory and economic objectives which should produce efficient outcomes redounding to the

broadband without subsidies. Therefore, no portion of the capital cost of the satellite should be allocated towards incremental subscribers who are subscribing solely due to government subsidies.

[21] Best fit values for fixed wireless, brownfield DSL, and fiber-to-the-home were generated from per-location deployment costs found in the Rural Broadband Experiment Funded Proposals Summary and Expressions of Interest, available at https://transition.fcc.gov/wcb/RBEOverviewChart5_4_2016.xlsx. Two of the three fixed wireless funded proposals—the only two pure-fixed-wireless funded proposals—cost approximately $1,000 per location (First Step Internet, LLC & Skybeam, LLC). The brownfield DSL best fit value of approximately $1,600 is based on an average value of three cost-density curves generated by using benchmarks from Rural Broadband Experiment Expressions of Interest, calculated at the median density of census blocks in designated high-cost areas. The fiber best fit value of approximately $4,500 was generated using a cost curve of Rural Broadband Experiment Expressions of Interest for fiber in new census tracts, where the proposing operator had no presence. Fiber cost density data was supplemented with benchmarks at higher densities from internal projects and public data.

benefit of consumers in eligible areas. ACA aims to continue to refine its proposed approach, especially after reviewing the comments of other interested parties.

Respectfully submitted,

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July 21, 2016